



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,139	07/12/2006	Scott David Keniston	50002/40625	6558

57726 7590 04/01/2010  
MILLER, MATTHIAS & HULL  
ONE NORTH FRANKLIN STREET  
SUITE 2350  
CHICAGO, IL 60606

EXAMINER
----------

HUTCHINS, CATHLEEN R

ART UNIT	PAPER NUMBER
----------	--------------

3672

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

04/01/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

kdas@MILLERMATTHIASHULL.COM

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,139	<b>Applicant(s)</b> KENISTON ET AL.	
	<b>Examiner</b> CATHLEEN R. HUTCHINS	<b>Art Unit</b> 3672	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 December 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freedman US4329647 in view of Angehrn US4047430.

Freedman teaches an apparatus (Figure 1) for/capable of surveying drill holes using the method steps of feeding a survey tool P<sub>1</sub>-P<sub>n</sub> into a borehole, activating the tool once drilling is completed, and taking position readings from the survey tool as withdrawal Column 5: 21-25 of the drill string, wherein claim 18 in column 8: 10-12 teaches that the surveying may be obtained during drilling; the survey tool includes inertial survey package column 5: 26-30 (wherein directional surveying requires inertial survey equipment), inherently has a power source, inherently has a data logger (having a computer as described in column 11: 34-40), and a damping system (which is the drill

Art Unit: 3672

string that the survey tool is mounted on) to isolate from vibrations, particularly when in a sleep mode.

Freedman teaches a method of taking surveys at different intervals  $P_1$ - $P_n$ , to determine direction and trajectory, which inherently require an inertial survey package.

Freedman is silent as to whether the survey tool is held on the end of a drill string, but does not teach maintaining the survey tool in sleep mode during drilling, and then sensing when drilling has been stopped to activate the survey tool. Angehrn teaches logging while withdrawing the drill string from the formation so that the instruments are held in the sleep/ de-energized mode column 7: 11-13 while being fed downhole, and is activated ("ON" position) when the pipe is removed column 7: 19-24. Removal of the drill string indicates that drilling has ceased, and is sensed by accelerometers column 8: 30-39. The logging device is held at the end of the drill string at 14, just above the drill column 4: 41-44. It would have been obvious to a person having ordinary skill in the art at the time of the instant invention to modify Freedman in view of Angehrn to keep the tool in a sleep mode while drilling to conserve energy, to energize once drilling has been completed by sensing when drilling has stopped as indicated by upward motion such that accurate measurements may be taken, and to maintain the survey tool at the lower end of the drill string, such that measurements may be taken while the drill string is removed.

Drill strings inherently have joints and drill rods that require assembly/ disassembly when moved into or out of the well. Since Freedman teaches taking

surveys at known distance intervals, it can be interpreted that Freedman also teaches taking surveys during the exchange of drill rods. However, Freedman is silent as to the exchange of drill rods, and it can be argued that it would be obvious to take measurements during removal of drill rods, since the surveys are taken at fixed distance intervals, which can be chosen to correspond to the intervals of drill rod lengths, such that the measurements will be taken at least when the drill string has been halted for removing each drill rod. This would provide stationary measurements, which can be interpolated, as described by Freedman in column 11: 34-40.

### ***Response to Arguments***

Applicant's arguments, see remarks, filed 12/23/2009, with respect to the rejection(s) of claim(s) 1-3 and 5-9 under Freedman have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 35 USC 103(a) over Freedman in view of Angehrn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHLEEN R. HUTCHINS whose telephone number is (571)270-3651. The examiner can normally be reached on Mon thru Thurs 7:30-5, alternate Fri 7:30-4 EST.

Art Unit: 3672

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David J. Bagnell/  
Supervisory Patent Examiner, Art Unit 3672

/CRH/  
3/26/10